

Patent claims:

1. A pump, in particular a power-steering pump, having a flow-control valve device, the flow-control valve device having a piston (30) that is displaceably accommodated within a piston bore (3), and the piston bore (3) having at least one inflow channel and at least one outflow channel (13), and the piston having an axial inflow orifice (32) and a plurality of substantially radial outflow orifices (35) and a circumferential outflow groove (31) disposed between a first collar (19) and a second collar (17) which forms a control edge (15) for an outflowing fluid flow, wherein the axial inflow orifice (32) extends substantially cylindrically at least to the beginning of the radial, lateral outflow orifices (35), and the circumferential outflow groove (31) widens in terms of its radial depth on the outer circumference of the piston (30) towards the control edge (15).
2. The pump as recited in claim 1, wherein the outflow groove (31) widens in a slightly conical form (33) on the piston side and, as the result of a radially, inwardly directed arc (37), subsequently reaches its greatest depth in the control edge region.
3. The pump as recited in claim 1 or 2, wherein the diameters (41) of the radial outflow orifices (35) extend from the axial, cylindrical inflow orifice (32) into the radially inwardly directed arc (37) in the control edge region.
4. The pump as recited in claim 1 or 3, wherein the piston (30) has altogether three collars (17, 18, 19).
5. The pump as recited in claims 1 through 4, wherein the collars (17, 18, 19) have circumferential pressure-equalization grooves 20.
6. The pump as recited in claims 1 through 5, wherein the piston (30) can include a pressure-relief pilot valve.